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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 7907-3 (1975): Helical Extension Springs, Part III: Data Sheet for Springs Made from Circular Section Wire and Bar [TED 21: Spring]

“ज्ञान से एक नये भारत का निर्माण”

Satyanareshwar Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśākām

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard



HELICAL EXTENSION SPRINGS

PART III DATA SHEET FOR SPECIFICATIONS FOR SPRINGS
MADE FROM CIRCULAR SECTION WIRE AND BAR

1. Scope — Gives Data Sheet for processing of orders and queries for the specification for extension springs covered by IS : 7907 (Part II)-1976 'Helical extension springs: Part II Specification for cold coiled springs made from circular section wire and bar'.

2. Designation — The standard Data Sheet (see P 2) for the extension springs shall be printed in A4 size [see IS : 696-1972 'Code of practice for general engineering drawings (second revision)'] on transparent sheets and shall be designated as:

DATA SHEET IS : 7907 (Part III)

3. Procedure for Use of Data Sheet

3.1 It may not always be necessary to give all the data provided in the Data Sheet. Initially only those parameters that are required for the use of spring may be given. The parameters that are not necessary for the working of spring can be bracketed. The bracketed parameters are not tolerated, for example, the spring rate S_e .

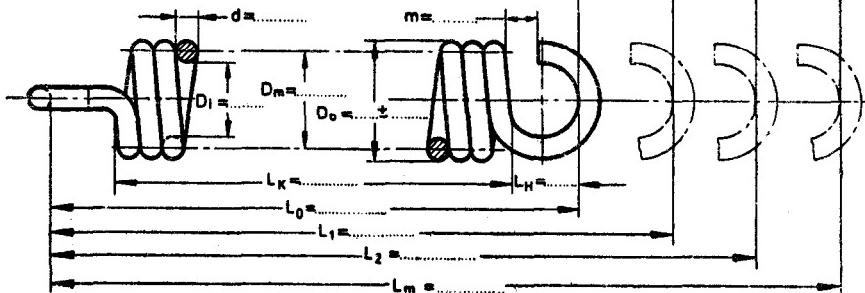
3.2 The Data Sheet can generally be used for all types of extension springs with bent eye or hook as shown in Fig. 1 to 9 of IS : 7907 (Part II)-1976. For springs without bent eye or hook as shown in Fig. 10 to 13 of IS : 7907 (Part II)-1976, or in the case of special form of extension springs, a separate drawing shall be attached to the Data Sheet. In that case this shall be mentioned in the item 12 of the Data Sheet. If different or additional dimensions are to be specified in special cases for bent eye or hook, this can be done in the diagram in the Data Sheet Itself.

3.3 The data on material and permissible shear stress and on tolerances depend on type of production which is determined by the size of the spring.

3.4 Extension springs made of wires of diameter up to 17 mm are generally cold-formed and usually manufactured with initial tension. The amount of this initial tension depends on the quality of wire, the wire diameter d , the coil ratio w , and the method of manufacture, see IS : 7907 (Part II)-1976.

3.5 Extension springs made with rods of diameter more than 17 mm are generally hot-formed and they have no initial tension. Manufacturer should be consulted regarding the shape of the eye or the end piece for such springs.

3.6 To allow economical manufacture of springs, the maximum possible tolerance according to IS : 7907 (Part II)-1976 shall be specified for the coil diameters D_o , D_1 or D_m , the unloaded length L_o and axial loads F_1 to F_m . The complimentary adjustments for manufacturing as described in 6 of IS : 7907 (Part II)-1976 shall be applicable.

$F_m = \pm \dots N, R = \dots N/mm^2$ $F_2 = \pm \dots N, R = \dots N/mm^2$ $F_1 = \pm \dots N, R = \dots N/mm^2$ $F_0 = \pm \dots N, R = \dots N/mm^2$ (SPRING RATE $S_c = \dots N/mm$)

GIVE ONLY THOSE PARTICULARS WHICH ARE FUNCTIONALLY IMPORTANT AND CROSS THE APPROPRIATE CIRCLES. AVOID REDUNDANT DIMENSIONING. IN THE CASE OF SHEAR STRESS R ADD THE APPROPRIATE SUBSCRIPT S OR K AS PER IS:7907(PART I). FOR REASONS OF ECONOMY THE TOLERANCES SHOULD BE MADE AS LARGE AS POSSIBLE

1	NUMBER OF WORKING COILS	$i_r = \dots$
2	RELATIVE ANGULAR POSITION OF HOOK OPENINGS HOOKS OR HOOK OPENINGS OFFSET FROM EACH OTHER BY (DEGREE) (IN THE MANNER OF A RIGHT-HAND THREAD)	
3	STROKE	$h = \dots \text{mm}$
4	LOAD CYCLE FREQUENCY	$n = \dots \text{Hz}$
5	MAXIMUM WORKING TEMPERATURE $\dots ^\circ\text{C}$	
6	WIRE OR BAR SURFACE	<div style="display: flex; align-items: center;"> DRAWN <input checked="" type="radio"/> ROLLED <input checked="" type="radio"/> SPRING SHOT-PEENED <input type="radio"/> </div>
7	SURFACE PROTECTION	
8	MATERIAL	ACCORDING TO IS:..... PERMISSIBLE SHEAR STRESS $R_{sp} = \dots N/mm^2$
11	ANY OTHER SPECIAL DETAILS:	

TOLERANCES ACCORDING TO IS:7907(PART II)	
$D_o, D_i, (D_m)$	
L_0	
F_1 TO F_m	$\frac{F_1}{F_2}$
HOOK POSITION	
WIRE OR BAR DIAMETER d	
10 COMPLIMENTARY ADJUSTMENT FOR MANUFACTURING	
(A) IF ONE AXIAL LOAD F_0 AND THE CORRESPONDING LOADED LENGTH L_0 ARE SPECIFIED	
(B) IF TWO AXIAL LOADS AND THE CORRESPONDING LOADED LENGTHS ARE SPECIFIED	
MANUFACTURER'S DISCRETION FOR	
F_0, D_o AND $D_i (D_m)$ <input checked="" type="radio"/>	
L_0, i_r AND d <input checked="" type="radio"/>	
F_0, D_o AND $D_i (D_m)$ <input checked="" type="radio"/>	

				NAME OF FIRM		
ISSUE	MODIFICATIONS	DATE	NAME		NAME	DATE
SCALE	DATA SHEET FOR HELICAL EXTENSION SPRINGS IS:7907(PART III)				DRAWING NUMBER	

EXPLANATORY NOTE

This standard is one of the series of standards on design, calculation and specifications of helical coiled springs. Other standards in this series are:

IS : 7906 (Part I)-1976 Helical compression springs: Part I Design and calculation for springs made from circular section wire and bar

IS : 7906 (Part II)-1975 Helical compression springs: Part II Specification for cold coiled springs made from circular section wire and bar

IS : 7906 (Part III)-1975 Helical compression springs: Part III Data sheet for specifications for springs made from circular section wire and bar

IS : 7906 (Part IV) Helical compression springs: Part IV Guide for selection of standard cold coiled springs made from circular section wire and bar (*under preparation*)

IS : 7906 (Part V) Helical compression springs: Part V Specification for hot coiled springs made from circular section bar (*under preparation*)

IS : 7907 (Part I)-1975 Helical extension springs: Part I Design and calculation for springs made from circular section wire and bar

IS : 7907 (Part II)-1976 Helical extension springs: Part II Specification for cold coiled springs made from circular section wire and bar

IS : 7907 (Part IV) Helical extension springs: Part IV Guide for selection of standard cold coiled springs made from circular section wire and bar (*under preparation*)

In the preparation of this standard considerable assistance has been derived from DIN 2099 Sheet 2 Helical spring made from round wire and rod, Specifications for tension springs, issued by Deutschen Institut fur Normung (DIN).